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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,019	02/25/2002	Edward G. Tiedemann JR.	010475	8463

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QUALCOMM INCORPORATED
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EXAMINER

HALIYUR, VENKATESH N

ART UNIT	PAPER NUMBER
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2619

NOTIFICATION DATE	DELIVERY MODE
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06/03/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/084,019	Applicant(s) TIEDEMANN ET AL.	
	Examiner VENKATESH HALIYUR	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 (claims 1-7 canceled) is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 8-13, 15-18 is/are rejected.
- 7) ☒ Claim(s) 14, 19 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 02/01/2008 has been entered.

2. A new search was performed and therefore the indicated allowability of claims 8-19 is withdrawn in view of the newly discovered reference(s) to Jia et al, Chennakeshu et al and Shibutani. Rejections based on the newly cited reference(s) follow.

3. Claims 1-22 are pending in the application. Claims 1-7 are canceled. Claims 20-22 are new.

Claim Objections

4. Claim 22 is objected to because of the following informalities:

a. Claim 22 is dependent upon claim 8 which appears to be an inadvertent typographical error. Claim 10, which depends on claim 8 recite the same

limitations as of claim 22 rendering the claims 10 and 22 duplicate claims.

Therefore one of the claims must be canceled or claim 22 should be made dependent upon claim 20. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by DeMartin et al [US Pat: 6,421,527].

Regarding claim 12, DeMartin et al in the invention of "System for Dynamic Adaptation of Data/Channel Coding in Wireless Communications" disclosed in a wireless communication system (**Figs 1-3, col 1, lines 45-50**) for processing voice communications and packet-switched communications, a base station (**BS of Fig 3, col 2, lines 8-28**) comprising: receive circuitry operative to receive signals on a reverse link (**up link, col 3, lines 19-47, Fig 3**), including a quality message with a parity check (**channel measurement with CRC parity check, col 4, lines 8-31**), and differential

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indicators, the quality message periodically providing a quality metric of a forward link **(down link C/I measurements, col 3, lines 66-67,col 4, lines 1-8)**, wherein the differential indicators track the quality metric between successive quality **messages (moving average of the quality indicator C/I of the channel, col 4, lines 48-55)**; a memory storage unit operative to store a quality message received on the reverse link **(item 63 of Fig 4, col 4, lines 56-65)**; and a differential analyzer **(item 39 of Fig 2, channel analysis with delta modulation)** to update the quality message stored in the memory storage unit in response to the differential indicators (channel grade indicator) and the parity check **(col 5, lines 64-67,col 6, lines 1-44)**.

Regarding claim 13, DeMartin et al in the disclosed a wireless communication system comprising processing unit **(Figs 1-4, col 1, lines 45-50)**, operative for executing computer-readable instructions; and a memory storage unit adapted to store plurality of computer-readable instructions for: generating quality messages **(col 4, lines 32-48)** and differential indicators at first frequency **(col 5, lines 53-67)**, the quality messages providing information on the quality of a communication link **(col 1, lines 45-50)**, wherein the differential indicators track a quality metric between successive quality messages **(C/I quality indicator of the channel, col 4, lines 48-55)**; and generating a parity check for each of the quality messages **(channel measurement with CRC parity check, col 4, lines 1-31)**.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8-11,15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu et al [US Pat: 5,905,742] in view of Shibutani [US Pub: 2003/0002518].

Regarding claims 8,11, Chennakeshu et al in the invention of “Method and Apparatus for Channel Symbol Decoding” disclosed in a wireless communication system (Figs 2-4) , a method comprising: estimating a channel condition over a first time window (**channel quality measured over a holding window, col 9, lines 18-29, Fig 4**); comparing the estimated channel condition to a first threshold value (**col 9, lines 30-39**); Chennakeshu et al disclosed transmitting differential indicators based on the comparison (**col 8, lines 14-67,1-17**) and transmitting differential indicators independently of quality messages (**col 6, lines 30-36, col 12, lines, 46-54, Figs 2A/B**) but fails to disclose determining a transmission rate for transmission of quality messages and transmitting quality messages at the transmission rate, However, Shibutani in the invention of “Slot Assignment Algorithm” disclosed a method for transmitting messages at different

rates based on the determination of a channel condition (**para 0046-0047, Figs 3-4, Table 2**). Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting messages at different rates based on the determination of a channel condition as taught by Shibutani in the system of Chennakeshu et al to determine a transmission rate for transmission of quality messages and differential indicators based on the comparison and transmitting quality messages at the transmission rate and transmitting differential indicators independently of quality messages. One is motivated as such in order to improve data transmission quality by estimating channel condition based on a differential channel quality indicators of the measured channel using an adaptive data rate transmitting scheme.

Regarding claim 9, Chennakeshu et al disclosed wherein the first time window is dynamically adjusted based on operation of the system (**col 9, lines 61-67, col 10, lines 1-9**).

Regarding claim 10, Chennakeshu et al disclosed calculating an average channel condition (**col 8, lines 36-44**); and calculating variance of the channel condition (**col 8, lines 45-67, col 9, lines 1-3**).

Regarding claim 15, Chennakeshu et al disclosed a wireless apparatus (**Fig 2/6**), comprising: processing unit (**item 39 of Fig 2, item 52 of Fig 6**), operative for executing computer-readable instructions (logic); and a memory storage unit (**item 50 of Fig 6**) adapted to store a plurality of computer-readable instructions for: estimating a channel condition over a first time window (**channel**

quality measured over a holding window, col 9, lines 18-29, Fig 4);
comparing the estimated channel condition to a first threshold value (**col 9, lines 30-39**); Chennakeshu et al disclosed transmitting differential indicators based on the comparison (**col 8, lines 14-67,1-17**) and transmitting differential indicators independently of quality messages (**col 6, lines 30-36, col 12, lines, 46-54, Figs 2A/B**) but fails to disclose determining a transmission rate for transmission of quality messages and transmitting quality messages at the transmission rate, However, Shibutani disclosed a method for transmitting messages at different rates based on the determination of a channel condition (**para 0046-0047, Figs 3-4, Table 2**). Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting messages at different rates based on the determination of a channel condition as taught by Shibutani in the system of Chennakeshu et al to determine a transmission rate for transmission of quality messages and differential indicators based on the comparison and transmitting quality messages at the transmission rate and transmitting differential indicators independently of quality messages. One is motivated as such in order to improve data transmission quality by estimating channel condition based on a differential channel quality indicators of the measured channel using an adaptive data rate transmitting scheme.

Regarding claim 16, Chennakeshu et al disclosed that the wireless communication system supporting a plurality of carriers (**plurality of Figs 2-4, col 11, lines 14-31**), a method comprising: determining an average channel

condition among the plurality of carriers (**channel quality measured over a holding window, col 8, lines 36-67, Fig 4**); comparing the average channel condition to a first threshold value (**col 9, lines 1-29**); Chennakeshu et al disclosed transmitting differential indicators based on the comparison (**col 8, lines 14-67, 1-17**) and transmitting differential indicators independently of quality messages (**col 6, lines 30-36, col 12, lines, 46-54, Figs 2A/B**) but fails to disclose determining a transmission rate for transmission of quality messages and transmitting quality messages at the transmission rate, However, Shibutani disclosed a method for transmitting messages at different rates based on the determination of a channel condition (**para 0046-0047, Figs 3-4, Table 2**).

Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting messages at different rates based on the determination of a channel condition as taught by Shibutani in the system of Chennakeshu et al to determine a transmission rate for transmission of quality messages and differential indicators based on the comparison and transmitting quality messages at the transmission rate and transmitting differential indicators independently of quality messages. One is motivated as such in order to improve data transmission quality by estimating channel condition based on a differential channel quality indicators of the measured channel using an adaptive data rate transmitting scheme.

Regarding claim 17, Chennakeshu et al disclosed assigning a weight to each of the plurality of carriers, wherein the average channel condition is a weighted average (**col 11, lines 32-56**).

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jia et al [US Pub: 2003/0072395] in view of Chennakeshu et al [US Pat: 5,905,742].

Regarding claim 18, Jia et al in the invention of "Method and Apparatus for Channel Quality Measurements" disclosed a wireless communication system comprising processing unit (**Fig 2**), operative for executing computer-readable instructions; and a memory storage unit adapted to store plurality of computer-readable instructions for (**para 0034-0037**): determining a best channel condition associated with a first frequency and generating a quality message (**CQI, para 0057-0059**) and a frequency indicator, the frequency indicator identifying the first frequency (**para 0075-0077**) but fails to disclose the limitation of generating differential indicators separately from the quality message. However Chennakeshu et al disclosed the limitation of generating and transmitting differential indicators separately from the quality message (**col 6, lines 30-36, col 12, lines, 46-54, Figs 2A/B**). Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting messages at different rates based on the determination of a channel condition as taught by Chennakeshu et al in the system of Jia et al to generating and transmitting differential indicators independently of quality

messages. One is motivated as such in order to improve data transmission quality by estimating channel condition by generating and transmitting differential indicators separately from the quality message.

Allowable Subject Matter

10. Claims 14, 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 20-22 are allowed over prior art. The claim objections made in this office action must be overcome for the allowability of claim 22.

Conclusion

12. Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached @ (571)-272-7884. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

/Venkatesh Haliyur/

Examiner, Art Unit 2619

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2619